



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

CHRISTIAN FAITH AND SCIENTIFIC FREEDOM.

BY THE REV. J. A. ZAHM, C. S. C.

OURS is preëminently an age of intellectual activity. Nowhere is this activity more marked than in the domain of the inductive sciences, especially the newer sciences of biology, geology, anthropology and prehistoric archæology. During the last few decades, particularly, these branches of knowledge have been invested with a human interest that is not possessed by any of the other natural sciences. The reason is obvious. Their conclusions have a more direct bearing on the traditional teachings of Christianity, whilst their tendencies are supposed, by many at least, to be the reverse of those of faith and dogma. We are even informed that we must now choose as our guide, either Science or the Church. We cannot, it is averred, follow the teaching of both, because, we are assured, they are hopelessly irreconcilable. We are told, furthermore, that Christian believers, who would devote themselves to the pursuit of science, are necessarily so hampered by scriptural restrictions and forms of dogma that they do not and cannot enjoy the same freedom of thought in investigating nature as those who have rejected all forms of religious teaching.

This is a question that will bear examination, and if it shall appear that the impression, now so prevalent, is false and unfounded, it will necessitate a revision of views that have been so long current regarding the attitude of science towards religious beliefs. And if it shall be evinced that the Catholic, who is usually reputed to be the most enthralled by faith and dogma, enjoys the highest degree of intellectual freedom, then we may safely assume that all Christian communicants enjoy the same liberty of thought as far as revealed truth is concerned, and that

the intellectual thralldom we hear so much of is the veriest chimera.

I purpose in this paper briefly to consider the attitude of the Church towards the pursuit of science, as evidenced by the ordinary magisterium of the Pontiffs and Doctors of the Church, and by the declarations and labors of those of her children who have devoted their lives to the study of nature, and whose splendid achievements in every department of science constitute a most valuable portion of the patrimony of our race.

It is scarcely necessary to premise that all orthodox Christians deny even the possibility of a conflict between science and revelation. It is impossible that revealed and demonstrated truths should not agree, because it is impossible that God should contradict Himself. All truths of the natural as well as of the supernatural order proceed from Him, and a conflict, therefore, can never be more than apparent. It may not always be possible at a given time to show their agreement, but it can never be demonstrated that they are contradictory. It may happen, and occasionally does happen, that the conclusions of science appear to contravene certain articles of faith, but in reality the apparent discord is due entirely to misapprehension of the teachings of faith or to a misinterpretation of the facts of nature. In such cases the difficulty is but temporary and is sure to disappear with a better understanding of the facts involved.

Regarding questions of philosophy and science, that have no direct bearing on dogma, the Church has always permitted the greatest liberty of thought and freedom of discussion. We have most striking instances of this in the works of the early fathers and doctors regarding questions that long ages ago were the occasion of as much study and controversy as they are now. Among these much mooted questions were those that referred to the Mosaic cosmogony, the Noachian Deluge, the chronology of the Bible and the age of the human race.

According to the allegorical system of the Alexandrian school of which Origen, Athanasius, and Clement of Alexandria were the most distinguished exponents, all things were created simultaneously, by the fiat of Omnipotence, and the days of creation mentioned in Genesis are to be taken, not in a literal, but in a metaphorical sense. The Syrian School, represented by St. Ephrem and St. John Chrysostom, advocated the literal interpre-

tation of Genesis, and maintained that the Genesiac days were days of twenty-four hours each.

The celebrated Greek doctors, St. Gregory Nazianzen, St. Basil, and his brother, St. Gregory of Nyssa, taught that matter was first created in its primal, elementary condition, and that it was afterwards, during the six days, which were understood in a literal sense, fashioned into various forms as recorded in Genesis. This opinion was subsequently adopted by the great Latin doctors, Sts. Ambrose and Gregory the Great.

What will surprise those who are wont to regard all great scientific conceptions as being of modern date, we find in the *Hexameron* of St. Gregory of Nyssa, the germs of the celebrated nebular hypothesis of Laplace. Indeed, the whole of his great work on Genesis is based on the truth of this assumption. But the masterly work of the renowned Latin Doctor St. Augustine, on the days of creation,—*De Genesi ad Literam*,—is by far the most complete and comprehensive treatise on the subject that the early Church has given us. He admits the simultaneous creation of the Alexandrians, but repudiates the Syrian and Cappadocian interpretation of the six days. Instead of days he demands indeterminate intervals of time—*volumnia sæculorum*. His interpretation is essentially the same as that given by modern exegesis, of which he may justly be regarded as the prophet and precursor. A knowledge of geology and astronomy, as now understood, would have furnished him with a key to many difficulties that in his day were insuperable. But he was aware that something was lacking to complete his view of the work of creation, and he was willing to leave to the future the development of the ideas to which he had given twenty-five of the best years of his life.

The diversity of views entertained by the various schools and authorities just named, regarding the interpretation of the Mosaic days of creation, admirably illustrates the liberty of thought which the Church has always permitted her children in matters not connected with faith and morals. The same freedom of thought and discussion has likewise been allowed regarding the Noachian Deluge, the chronology of the Bible, the age of the human race, and similar questions which come within the purview of profane science.

The illustrious Fathers and Doctors just named not only show

by their writings that they enjoyed full liberty of thought in all questions of science, but they tell us so in words that cannot be misunderstood. The angel of the schools, St. Thomas Aquinas, indicates the spirit which should animate all who treat such debatable questions as those just mentioned. "As," he says, "Holy Writ may be explained in many ways, no one should cling so tenaciously to any particular explanation as to venture to maintain it, when, by any conclusive argument—*certa ratione*—it is evident that what one thought to be the sense of Scripture is false." In the language of the great bishop of Hippo, we must always be on our guard against "the seductive loquacity of a false philosophy, and the timid superstition of a false religion."

The teaching of Popes and Councils has been one with that of Fathers and Doctors. The words of the Council of the Vatican, to go no further, are so explicit on this point as to need no commentary. "The Church," it declares, "does not forbid the human sciences to make use of, each in its own domain, their own principles and methods." In his admirable encyclical *Æterni Patris*, Leo XIII. makes the same statement in almost identical terms. "In those points of doctrine," writes the illustrious Pontiff, "which the human intelligence is able to apprehend by its natural powers, it is right that philosophy should be left to its own methods and principles and arguments, provided, however, that it do not audaciously withdraw itself from divine authority." In his encyclical on *Human Liberty* the same enlightened head of the Church observes that "It is not to be forgotten that there is an immense field for the free exercise of the activity and of the minds of men in those things, namely, which have no necessary relation to the teachings of faith and Christian morals, or concerning which the Church, without using her authority, leaves the judgment of the learned entire and free." Pius IX., Benedict XIV., and other Popes, whom it were easy to quote, if necessary, safeguard the liberty of thought of the children of faith in language equally clear and decisive.

But the Roman Pontiffs are not satisfied with words. They show by their actions, by the encouragement they have given to men of science in their researches, that they not only permit, but favor the fullest exercise of freedom of thought and inquiry. And what is more, they have encouraged this liberty of thought and investigation in matters which those not in sympathy with

the Church would have us believe she is afraid to examine, or to have examined by others. A few instances—many similar ones might be adduced—will illustrate the truth of this statement.

When Champollion's discovery of the Egyptian hieroglyphics was announced in Europe, "timid minds," says Cardinal Wiseman, "took alarm and reprobated it as tending to lead men to dangerous investigations. It was feared, apparently, that the early Egyptian history, thus brought to light, would be employed as that of the Chaldeans and Assyrians had been in the last century, for the purpose of impugning the Mosaic annals." But the then reigning Pontiff, Leo XII., did not share these fears. On the contrary, he invited the distinguished savant to prepare a work relative to the obelisks of Rome, which was printed and engraved at the Pope's expense. In referring to this matter, in a letter to his friend, Cardinal Wiseman, Champollion writes: "It is a real service which his Holiness renders to science, and I shall be happy if you will be good enough to place at his feet the homage of my profound acknowledgment."

So, too, was it when the first discoveries were made regarding Quaternary Man. The exultation of the enemies of revelation at the prospect opened up by the discovery of fossil man was indeed calculated to inspire apprehension and distrust in the minds of those who had not made any special study of geology and archæology, but, who, on the contrary, had been led to regard such studies as having a tendency inimical to the Inspired Record. Pius IX., however, like his predecessor, Leo XII., showed that far from endangering the teachings of faith such researches would rather tend to illustrate and corroborate them. This he did in a signal manner by his patronage of the eminent archæologist, Michele de Rossi, during his exhaustive investigations regarding Quaternary Man in the environs of Rome.

All are familiar with the manner in which a few years ago the present wise ruler of the Church threw open the doors of the great Vatican Library to the scholars of the world. And many, doubtless, have read the admirable letter he penned when he placed at the disposition of students and authors this unique and most valuable storehouse of knowledge. It will be sufficient to reproduce one sentence from this memorable document to prove without peradventure that Leo XIII., like his predecessors in the chair of Peter, felt that the Church has nothing to fear from the

promulgation of truth ; that on the contrary he was convinced that truth, from whatever quarter—from history as well as from Egyptology and archæology—must ever be of service to religion. In referring to the necessity of truthfulness and accuracy in the pursuit of historical science the learned Pontiff declares that “The first law of history is to dread uttering a falsehood ; the next is not to fear stating the truth ; lastly, the historian’s writings should be open to no suspicion of partiality or animosity.”

But it may be urged that the Papal utterances just quoted were not intended to be understood literally or seriously ; that the examples of the Popes, in encouraging scientific research, are no indication and still less a guarantee of liberty of thought on the part of their subjects, and cannot be so construed. Let us see.

In 1867 a memoir was read before the Congress of Anthropology and Prehistoric Archæology at Paris announcing a discovery that, it was claimed, proved beyond doubt the existence of Tertiary Man. The discovery consisted of certain flints found at Thenay, in France, which were so fashioned that their discoverer maintained that they were unmistakably the work of human hands. The members of the congress were amazed, and it requires much to surprise a modern anthropologist or archæologist. The discovery was indeed so far reaching in its significance that Biblical chronology appeared to be completely disproved, and it looked as if the truth and integrity of the Sacred Scriptures were jeopardized beyond all hope of salvation. “At last,” exclaimed infidel scientists, “one *fact*—whose meaning is unmistakable—has been adduced that is diametrically opposed to the teaching of the Bible and theologians regarding the antiquity of man.” A shout of triumph went up from the enemies of revealed truth, and the Holy Scriptures, as an inspired record, was relegated to the limbo of myths and dead superstitions.

But who was the author of the memoir that created such a sensation among scientific men ; who was the discoverer of the flints that at once became the nine days’ wonder of the civilized world ? He was a pious French priest. He was also a learned theologian, and at the same time one of the most accomplished archæologists in Europe. But, true scientist that he was, he was a student of facts. He accepted the facts as he found them, and was willing to let his deductions from them stand the test of

criticism. The facts, to his mind, conclusively proved the existence of Tertiary Man, and for this reason Abbé Bourgeois was, until the day of his death, Tertiary Man's most ardent and consistent defender. It was subsequently shown that he, together with the majority of the archæologists of Europe, had misinterpreted the facts in the case; that the flints he discovered were not of human manufacture, and that Tertiary Man was something entirely imaginary.

This, however, matters not. During the many years he devoted to his researches, which seemed to many to presage the certain undermining of all Scriptural authority, Abbé Bourgeois was never interfered with by his ecclesiastical superiors. He was always perfectly free and untrammelled, and never for a day, so far as the Church was concerned, did he cease to enjoy the highest degree of scientific freedom. More than this; some of his strongest sympathizers and most earnest collaborators were zealous and loyal ecclesiastics. The Catholic press of Europe was freely placed at his disposal for an exposition of his views, and he everywhere and on all occasions received from his confrères in religion that kindly consideration to which his profound science and earnest piety entitled him.

As for himself, he never for a moment experienced any doubts about the ultimate bearing of his discoveries on revelation. He trusted to the future for light, and to further and more extended investigation to clear up difficulties that for the moment were insoluble.

But startling as was the announcement made by the Abbé Bourgeois, it was not more so than the theory of Preadamites—a conjectural race of men that became extinct long before the creation of the traditional father of the human species,—that was so strongly championed by two other well-known Churchmen, the Abbé Fabre d'Envieu, and the distinguished oratorian Abbé Valroger. And notwithstanding that their theory was apparently contrary to dogma, and subversive of Scriptural teaching, these devoted sons of the Church were left completely undisturbed by ecclesiastical authority. Far from being the victims of the thunderbolts of the Vatican, they continued to the end of their lives to enjoy the fullest measure of liberty of thought and freedom of expression.

What has already been said should convince any unbiassed

mind that Catholics do, of a truth, enjoy all the freedom in the pursuit of science that the human mind can demand. But in order to clinch the argument, I shall let some of the most distinguished representatives of modern scientific thought testify for themselves, as well as for their brethren in the faith.

The illustrious French chemist, M. J. B. Dumas, perpetual secretary of the French Academy of Sciences, declares in one of his admirable *Éloges* that "Faith does not kill science, and science kills faith still less."

Rosellini, the learned collaborator of Champollion, in referring to those who were raising an outcry against the discovery of the distinguished Frenchman, truthfully observes that "This truth is founded on eternal bases, neither can the envy of man deface it. And if men eminent for their piety and learning admit the new system, what has revelation to fear from it?"

Pasteur, in the beautiful discourse pronounced by him on the occasion of his reception into the French Academy, does not hesitate to declare that "If we were deprived of these conceptions,"—the truths of faith,—"the sciences would lose that grandeur which they draw from their secret relations with the infinite verities."

Baron Cauchy, the greatest mathematician of his age, who, according to one of his fellow associates of the French Institute, possessed the combined genius of Euler, Lagrange, Laplace, Gaus and Jacobin, affirms that "It is precisely because it is exact and true that the Christian religion is so eminently favorable to the progress of the sciences, and to the most noble faculties of our intelligence. . . . It is because it is exact and true that it presides at the sublime meditations of the Augustines, the Descarteses, the Newtons, the Fermats, the Maclaurins, the Pascals, the Linneuses, the Eulers, the Copernicuses, the Tycho-Brahes, the Cassinis, of all those great men of all ages, who in the contemplation of nature and of the admirable laws established by the Creator found without ceasing new motives to bless and adore the author of so great marvels. . . . I have made a profound study of the human sciences, especially those that are called the exact sciences, and I have more and more recognized the truth of those words of Bacon : ' A little philosophy inclineth a man's mind to atheism, but depth in philosophy bringeth men's minds about to religion.' "

The erudite historian and Orientalist, François Lenormant, a famous son of a noble sire, writes in the preface of his great work *Histoire Ancienne de l'Orient*, 'I am a Christian, and I proclaim it loudly. But my faith is not affrightened at any of the discoveries of criticism when they are true. A devoted son of the Church in all necessary things, I claim with the more ardor the rights of scientific liberty. And from the very fact that I am a Christian, I regard myself as being more completely in the sense and in the spirit of science than those who have the misfortune not to possess the faith.'

And thus I might go on with scores of similar witnesses to the fact that none more than the Christian enjoys all the rights and prerogatives of scientific freedom.

A Christian may not, it is true, proclaim with M. Duval that "Science is the elimination of the supernatural in the explanation of natural things." He may not endeavor, like Haeckel, to replace the Creator by abiogenesis,—spontaneous generation; nor hold with Büchner that "God is only another expression for our ignorance," nor that "every science, and especially every philosophy that seeks reality instead of appearance, truth instead of pretence, *must necessarily be atheistic*." This is not intellectual liberty; it is intellectual license, as irrational as it is unscientific and unnatural. Haeckel and his school may, if it so please them, descant on "the plastidule soul," and dilate on "the potentialities of carbon;" Vogt may hold that "the brain secretes thought as the liver does bile," or that "all vital action is the result of the molecular forces of the protoplasm that displays it;" Moleschott may teach that there is "no thought without phosphorus" or that "man is what he eats," but Christian men of science object to being forced to accept such vagaries as science. Some one has remarked that modern science is more dogmatic than religion. If by the term science is meant the wild theories and fanciful speculations of a certain class of contemporary scientists, the statement is perfectly just. The most dogmatic people in the world to-day are certain scientific theorists of the evolutionary and atheistic schools of thought.

The mistake is that these men reject every induction and every proposition that does not rest on the testimony of the senses. Contrary to the teachings of sound philosophy, the data of metaphysics and the truths of revelation are proscribed as extra-

scientific, or anti-scientific. A first cause is excluded from the domain of science and relegated to that of mysticism, because, say Littrè and Spencer, a first cause is *unknowable*. They do not believe in the existence of a personal God, because, like Lalande, they are unable to see Him with their telescopes. With Broussais they deny that there is a soul because they have never detected it with their scalpels. They would prove the existence of a Creator by the spectroscope, as they disclose the existence of certain terrestrial elements in the sun and the stars. They look for the soul at the bottom of their crucibles and retorts, and not finding it there gravely inform us that it is a fantastic conceit which can have no place in this age of science and criticism.

This extravagant and irreligious teaching is not new in the history of science. In 1806 the French Institute counted more than eighty different theories hostile to the Sacred Scriptures that had been developed in less than half a century. Not a single one of them now remains. Since 1806 hundreds, yea, thousands, of other equally fanciful theories have been evolved, all, or nearly all, of which have been consigned to oblivion.

Not without reason, therefore, does the Apostle of the Gentiles warn us not to be "led away with various and strange doctrines." And foreseeing the dangers to which the children of the faith will be exposed, he exhorts them to "prove all things," and to "hold fast that which is good." By thus acting we exercise to the fullest extent that liberty of thought which the Church would be the last to have us forfeit. For no one, more than the orthodox Christian, is in a better position to realize in all their truth those beautiful words of our divine Master: "And you shall know the truth, and the truth shall make you free."

J. A. ZAHM.